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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/820,292

04/08/2004

Jong-Hoon Oh

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03/01/2006

EXAMINER

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ART UNIT

PAPER NUMBER

2863

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/820,292

Applicant(s)

OH, JONG-HOON

Examiner

Michael P. Nghiem

Art Unit

2863

AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-10, 12-18 and 20-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-6, 12, 13, 15-18 and 20-23 is/are rejected.
- 7) ☒ Claim(s) 7-10 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

The amendment filed on February 7, 2006 has been acknowledged.

### ***Withdrawal of Allowability***

The indicated allowability of claims 6, 12, 13, 20, and 23 is withdrawn in view of the new grounds of rejection as follow.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2, 4-6, 12, 13, 15-17, and 20-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Lawrence (US 2003/0056057).

Regarding claims 6, 12, 20, and 23, Lawrence discloses a multi-chip package (Fig. 1) comprising:

- a memory device (104) receiving a clock signal having a frequency (SDRAM receives frequency from an oscillator, paragraph 0004, lines 5-7), the memory device

operating at the clock signal frequency (paragraph 0004, lines 5-7) and including a temperature sensor (106) providing a temperature signal representative of a temperature of the memory device (Fig. 1);

- a logic device (102) providing the clock signal (memory is integrated in processor, paragraph 0026, lines 9-13) and receiving the temperature signal (Fig. 1), wherein the logic device adjust the clock signal frequency based on the temperature signal (paragraph 0018, lines 1-4), and wherein the logic device provides the clock signal at a first frequency when the temperature signal indicates that the temperature of the memory device is less than a threshold temperature (paragraph 0004, lines 7-9; paragraph 0019, lines 12-16; frequency at temperature that is less than highest temperature), and provides the clock signal at a second frequency when temperature signal indicates that the temperature of the memory device is at least equal to the threshold temperature (frequency at the highest temperature, paragraph 0004, lines 7-9; adjustable frequency at various temperatures, paragraph 0019, lines 15-16).

Regarding claims 2 and 17, Lawrence discloses that the memory device comprises a random access memory device (SDRAM, Fig. 1).

Regarding claims 4 and 16, Lawrence discloses that the logic device comprises a microprocessor (paragraph 0018, line 1).

Regarding claims 5 and 21, Lawrence discloses that the temperature signal is indicative of a junction temperature of the memory device (Fig. 1).

Regarding claim 13, Lawrence discloses that the memory device has a rated operating frequency at a rated operating temperature (frequency at operating temperature, paragraph 0020, lines 1-3).

Regarding claim 15, Lawrence discloses that the multichip package includes a logic device (102).

Regarding claim 22, Lawrence further discloses that the threshold temperature comprises a rated operating temperature of the memory device (paragraph 0004, lines 7-9).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 3 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lawrence in view of Ooishi et al. (US 6,731,535).

Lawrence discloses all the claimed limitations as discussed above except the memory device comprises a magnetic random access memory device.

Nevertheless, Ooishi et al. discloses a magnetic random access memory device (column 1, line 13) for the purpose of obtaining high speed operation and high integration capability (column 1, lines 13-22).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide Lawrence with the magnetic random access memory device as disclosed by Ooishi et al. for the purpose of obtaining high speed operation and high integration capability.

***Allowable Subject Matter***

Claims 7-10 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Reasons For Allowance***

The **combination** as claimed wherein the memory device has a rated operating frequency at a rated operating temperature, wherein the threshold temperature is substantially equal to rated operating temperature, wherein the first frequency is substantially equal to the rated operating frequency and wherein the second frequency is less than the first frequency and at a frequency at which the memory device operates reliably at a temperature above the rated operating temperature (claim 7) or the threshold temperature is substantially equal to the rated operating temperature wherein the first frequency is substantially equal to the rated operating frequency, and wherein the second frequency is less than the first frequency and at a frequency at which the memory device operates reliably at a temperature above the rated operating temperature (claim 14) is not disclosed, suggested, or made obvious by the prior art of record.

***Response to Arguments***

Applicant's arguments have been considered but are moot in view of the new grounds of rejection.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Nghiem whose telephone number is (571) 272-2277. The examiner can normally be reached on M-H.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**MICHAEL NGHIEM  
PRIMARY EXAMINER**

Michael Nghiem

February 24, 2006